

IN THE CLAIMS

1.(Original) A cannister-style toroidal vortex vacuum cleaner system utilizing a fluid flow, said cannister toroidal vortex vacuum cleaner comprising:

a cannister-style vacuum cleaner housing;

fluid delivery means;

separation means; and

a toroidal vortex nozzle;

wherein said fluid flow recirculates between said toroidal vortex nozzle and said separation means.

2.(Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein said toroidal vortex nozzle is vented.

3. (Cancelled) A cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein said toroidal vortex nozzle is vented to prevent the formation of a plume.

4. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein said toroidal vortex nozzle further comprises a brush.

5. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein said toroidal vortex nozzle further comprises a rotating brush.

6. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein said toroidal vortex nozzle further comprises a wheel.

7. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein said toroidal vortex nozzle is hinged between said toroidal vortex nozzle and said separation means.

8. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a hose removably attached at a first end to said toroidal vortex nozzle and removably attached at a second end to said housing.

9. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 having a hose removably attached to said housing being capable of being fitted with interchangeable toroidal vortex nozzle attachments.

10. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a hose that couples said toroidal vortex nozzle to said separation means.

11. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a hose removably attached at a first end to said

toroidal vortex nozzle and removably attached at a second end to said housing of a side by side configuration.

12. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a hose removably attached at a first end to said toroidal vortex nozzle and removably attached at a second end to said housing of a siamese twin configuration.

13. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a hose removably attached at a first end to said toroidal vortex nozzle and removably attached at a second end to said housing of a concentric configuration.

14. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a flexible hose removably attached at a first end to said toroidal vortex nozzle and removably attached at a second end to said housing.

15. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 having a removable hose removably attached at a first end to said toroidal vortex nozzle and removably attached at a second end to said housing.

16. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a handle removably attached to said housing.

17. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a container coupled to said separation means.

18. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a removable container coupled to said separation means.

19. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein said separation means is a centrifugal separator.

20. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 wherein at least one of said fluid delivery means and said separation means is disposed inside said cannister-style vacuum cleaner housing.

21. (Currently Amended) [[A]] The cannister toroidal vortex vacuum cleaner system in accordance with claim 1 further comprising a course mesh trap upstream of said separation means to protect said fluid delivery means from large objects in said fluid flow.

22.(Original) An upright-style toroidal vortex vacuum cleaner utilizing fluid flow comprising:

an upright-style vacuum cleaner housing;

fluid delivery means;

separation means disposed; and

a toroidal vortex nozzle;

wherein said fluid flow recirculates between said toroidal vortex nozzle and said separation means.

23.(Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 wherein said toroidal vortex nozzle is vented.

24. (Cancelled) A upright toroidal vortex vacuum cleaner system in accordance with claim 22 wherein said toroidal vortex nozzle is vented to prevent the formation of a plume.

25. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 wherein said toroidal vortex nozzle further comprises a brush.

26. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 wherein said toroidal vortex nozzle further comprises a rotating brush.

27. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 wherein said toroidal vortex nozzle further comprises a wheel.

28. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 wherein said toroidal vortex nozzle is hinged between said toroidal vortex nozzle and said separation means.

29. (Cancelled) An upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a hose.

30. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a hose that connects said toroidal vortex nozzle to said separation means.

31. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a hose of a side by side configuration.

32. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a hose of a siamese twin configuration.

33. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a hose of a concentric configuration.

34. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a flexible hose.

35.(Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a removable hose.

36.(Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a removable hose being capable of being fitted with interchangeable toroidal vortex nozzle attachments.

37.(Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a handle removably attached to said housing.

38.(Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a container coupled to said separation means.

39. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further comprising a removable container coupled to said separation means.

40. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 wherein at least one of said fluid delivery means and said separation means is disposed inside said upright-style vacuum cleaner housing.

41. (Currently Amended) [[An]] The upright toroidal vortex vacuum cleaner system in accordance with claim 22 further

comprising a ~~course~~ coarse mesh trap upstream of said separation means to protect said fluid delivery means from large objects in said fluid flow.

42.(Original) A vacuum cleaner system utilizing fluid flow comprising:

a toroidal vortex nozzle;

a centrifugal separator; and

a container coupled to said centrifugal separator;

wherein said fluid flow recirculates between said toroidal vortex nozzle and said centrifugal separator.

43. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 further comprising a collector.

44. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 ~~further comprising a collector~~, wherein the pressure in said ~~collector~~ container is greater than the pressure in said centrifugal separator.

45. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 wherein ~~ingoing and outgoing~~ said fluid flow is contained in concentric tubing between said toroidal vortex nozzle and said centrifugal separator.

46. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 wherein said fluid flow is generated by an impeller upstream of said centrifugal separator.

47. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 wherein said fluid flow is generated by a centrifugal pump within said concentric tubing.

48. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 wherein said fluid flow is generated by a propeller within said concentric tubing.

49. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim [[42]] 44 ~~further comprising a collector,~~ wherein ~~the pressure in said collector is greater than the pressure in said centrifugal separator,~~ wherein the difference in said pressures maintains vortex fluid flow without impeding matter from entering said ~~collector~~ container.

50. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 further comprising a ~~collector~~ container which is removable.

51. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 further comprising a ~~collector~~ container comprising a door.

52. (Currently Amended) [[A]] The vacuum cleaner system in accordance with claim 42 further comprising a ~~collector~~ container comprising a plug.

53. (Currently Amended) [[A]] The vacuum cleaner system in
5 accordance with claim 42 further comprising a ~~course~~ coarse mesh trap upstream of said centrifugal separator to protect said fluid delivery means from large objects in said fluid flow.

54. (Cancelled) A method for separation of particles from
10 fluid comprising the steps of:

delivering a fluid;

moving said fluid in a vortex; and

recirculating said fluid through a toroidal vortex
nozzle.

15 55. (Cancelled) A method in accordance with claim 51 wherein said toroidal vortex nozzle is vented.